

which furnishes the motive power for driving the multitudinous machinery of this busy manufacturing city. One of the most attractive views of the city is the Boulevard, looking east from the Illinois Central depot to Calumet Lake, about one mile in length and 100 feet wide, finely paved, and lined on either side by 200 elm trees. In the foreground, and to the right of the Boulevard, is the Hotel Florence, a beautifully situated and well appointed structure, with accommodations for 100 guests, and a dining room capable of seating 125 persons. A prominent structure in the same vicinity is the Arcade, a building of fine architectural design, 250 feet long by 164 feet in width and 90 feet high. On the first floor are 28 stores, while on the second floor is the Pullman Public Library, with 5,500 volumes, the generous gift of Geo. M. Pullman to the city. The book cases are all of cherry, of beautiful design. The library rooms, with offices, are 60 x 65 feet. On the same floor is the Arcade Theater, capable of seating an audience of 1,000 persons; also a bank, and the architect's office. The third story is devoted to lodge rooms, offices, etc.

As a beginning toward beautifying and ruralizing the city, some 30,000 trees and shrubs have been planted along the streets and in the parks. Prominent near the lake shore at the foot of the Boulevard are the Pullman Gas Works, which supply the city with light. The city has eight miles of gas mains and 250 street lamps, and 1,400 gas meters have been set. Across the Boulevard from the gas works is the Pullman depot, and east of this, between it and the lake, are the grounds for athletic sports—base ball grounds and race course, with its grand stands capable of accommodating 7,000 spectators. Finally, the Presbyterians, Methodists, Episcopalians, Baptists, Catholics, and Lutherans have flourishing societies in the city. There are no court houses, no saloons, no jails, and only one policeman. The people govern themselves, and have no Councils or Boards, with the single exception of a Board of Education.

Perhaps one of the most difficult of the problems which presented itself to the projectors of the city of Pullman was that of providing a system of perfect drainage and sewerage, and the way in which that problem was solved has proved so complete a success that it has been noted and commented on by those who have given attention to such matters throughout the world. It is but an example of following out what has long been acknowledged as the correct theory, resulting in a thorough accomplishment of the work, at what is now only a nominal cost, and which may in future be changed to an actual profit. There was no way of getting rid of the sewage by gravity, for it was as much as could be looked for that the surplus rainfall would thus be carried off on so flat a surface as that where the new city was laid out. Lake Michigan could have been reached by a pipe six or seven miles long, and by pumping the sewage could readily have been discharged therein, according to the plan recently inaugurated of disposing of the sewage in Boston. But the Pullman Land Association found a better way than that of further contaminating the waters of Lake Michigan so near Chicago and their own borders. They purchased land three miles away, and prepared a farm of sufficient size to dispose of the sewage of 10,000 persons, also erecting suitable farm buildings thereon, for a less outlay than would be incurred in laying a pipe to Lake Michigan, and this farm has since been successfully operated by the sewage from the city of Pullman. All the water from roofs and streets is carried by one system of pipes and sewers into Calumet Lake, while the sewage from houses, factories, etc., goes through a separate system of pipes to a large cistern under the water tower, whence it is constantly pumped to the farm. In all cases outside of houses, in mains, laterals, and house drains, salt glazed vitrified clay pipe is used; within the houses soil pipes are of iron, vertical ones being wrought iron, coated with coal tar varnish, put together with screw joints, the horizontal ones being of cast iron with lead joints. The sewage is conveyed to the farm by a 20 inch cast iron main, the farm end of which connects with a closed screening tank, excluding material that will not pass through a screen of a half inch mesh. From the tank the sewage passes through a pressure regulating valve, limiting the pressure on the pipes leading to the fields to about ten pounds, and the tank and valve act to regularly and evenly distribute the sewage, in the pipes provided therefor, over the farm.

The system of sewerage thus adopted has, from October, 1881, proved entirely adequate and simple in its operation, and the ratio of deaths in the city of Pullman has been less than seven per annum for every 1,000 people.

The Pullman Company also have for years kept up a large headquarters for their business in the city of Chicago, for which they have just erected and are now completing an imposing structure, nine stories high, on the corner of Michigan Avenue and Adams Street, of which our illustration gives two elevations. The main object of the building is to obtain permanent general offices, but it will afford much

more than this, the first three floors being devoted to the uses of the Pullman Company, the next three to general business, while the three top floors will be occupied as apartments. The edifice has a frontage of 120 feet on Michigan Avenue and 171 feet on Adams Street, and is nine stories high, perfectly fireproof from cellar to garret—fireproof tile and iron beams being used throughout. The style of architecture is a modification of the Norman round arched Gothic, modernized and adapted to the peculiar purposes for which

into two buildings, connected by the massive archway shown, and lending a very unique and picturesque effect to the building. In the court is located the grand stair-case and elevator system for the offices. Surmounting the granite and encircling the street front of the building, is a heavy moulded belt course, or impost moulding, from which starts the brick-work of the superstructure. The brick work is disposed in liberal masses, with broad windows. Terracotta is used for the string courses and projections, but to a limited degree. No stone is used above the granite story. The street corner of the building is accentuated by a circular bay, carrying with it the effect of a tower and conservatory up through the entire height from its massive granite base, and surmounted by an observatory.

Many of the more recent details and the illustrations herewith are from the columns of the *Western Manufacturer*.

The Mobility of the Brain.

It has long been known that the brain in normal conditions undergoes certain rhythmical movements. The powerful vessels at its base cause the cerebral mass to rise and fall with each systole and diastole of the heart. The brain also rises slightly with each expiration and sinks with inspiration. These phenomena are dependent, it is presumed, upon the presence of the cerebro-spinal fluid, since when that is withdrawn the movements cease.

M. Luys, in a paper recently read before the Academie de Medecine, states that the brain is subject to still other changes in position, dependent upon the attitude of the body. If a man is in the dorsal decubitus, or lies upon his side, or stands upon his head, the brain undergoes certain corresponding changes in position in obedience to the laws of gravity. The movements take place slowly, and the brain is five or six minutes in returning to its first position.

From these anatomical data M. Luys deduces some striking conclusions of practical interest. He explains, upon the theory of these gravitating movements, the symptoms of vertigo and faintness which feeble persons experience when suddenly rising from a horizontal position. He asks if the pains of meningitis are not due to an interference with these normal movements. In cases of insanity he calls attention to the excitability and agitation which often come on when the patient lies down at night. As a practical point in mental hygiene, M. Luys advised against prolonged travel during most of the day, and urged the value of giving the brain the change produced by a horizontal position at night.—*The Medical Record*.

NEW ORE ELEVATOR.

The device shown in the engraving can be used to raise ore and waste from a mine whenever the outside grade is longer than the mine grade. On the level at the top of the grades are two rail tracks, placed side by side for a short distance, one of which extends down the mine shaft and the other down the side of the mountain to the dumping place. These tracks are connected by switches, as shown in the plan view, in order that the loaded and empty cars may pass each other and be transferred from one track to the other. Over the middle of the double track section is a shaft—placed at an elevation sufficient to allow cars to pass beneath it—carrying two drums, around the larger of which is a rope leading down the mountain, and around the other a rope leading into the mine. These drums are so proportioned that the time necessary for the two sets of cars to make the journey will be the same.

In operating the device three or more ore cars and one dead-weight car are used. A loaded car passing down the mountain side will be able to raise both a loaded car and the dead-weight car from the mine, because of the greater leverage of the large drum around which its rope winds. After the car has discharged its load it is drawn to the top by the weighted car and an empty car descending to the mine, the combined weight of these two being sufficient to overcome the leverage. The large drum is provided with a groove, to receive a friction strap by which the speed of the cars can be regulated. It will be seen that this method utilizes the gravity of the material on a descending grade of greater length than the one up which the material has to be raised. By this plan all the work of raising the material from the mine and

returning the empty cars is done by gravity; the expense is reduced to a minimum, the work is rapidly done and completely controlled.

This invention has been patented by Mr. W. A. Hartt, 99 Lake Avenue, Rochester, N. Y.

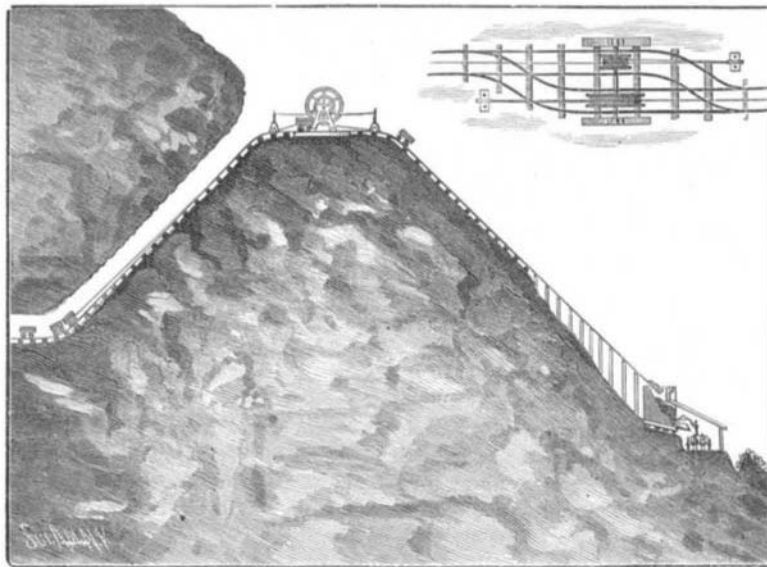
THE album of the Bank of England in which specimens of counterfeits are preserved has three notes which passed through the Chicago fire. Though they are burnt to a crisp, black ash, the paper is scarcely broken, and the engraving is as clear as new.



PULLMAN & CO.'S BUILDING AND GENERAL OFFICES, MICHIGAN AVE. AND ADAMS ST., CHICAGO.

the building is intended, the main object being to give it an expression of dignified elegance in its simple massiveness. The entrance to the apartment house is on Michigan Avenue, which has been made as inviting and pleasing as possible, while the entrance to the office portion, on Adams Street, is through a more business-like portal.

The first story is built of rock-faced granite, of a reddish hue, laid up in large blocks in a heavy buttressed manner at the base, giving it an expression of great strength, while the color harmonizes pleasantly with the red, pressed brick used in the rest of the structure. A series of arcades on the Adams street facade, support the superstructure, the heavy elliptic arches being on massive columns with carved capitals and moulded octagon bases and highly polished red



HARTT'S NEW ORE ELEVATOR.

granite shafts. A marked feature of this elevation is the large central arch that spans the entrance to the court approaching the offices. This granite arch is 22 feet in diameter, supported on large rectangular columns, with carved caps and moulded bases and polished red granite shafts. The arch is enriched in its spandrels with bold terra cotta carvings, and provided with beautiful wrought iron gates. The court referred to extends open from the grade upward, running back at right angles to a depth of 80 feet from Adams street, and entirely open to the street, making a recess, as shown in the engraving, that in effect divides this elevation